

~~ATTACHMENT~~SECTION J-4

PERFORMANCE MEASURES

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1. Introduction

The Data Access and Dissemination System (DADS) Program uses a performance-based strategy for conducting its work and contracting for services. Outcome-oriented goals and objectives exist for this program, with quantitative business and technical metrics derived from those objectives. The metrics are used to determine if the program's objectives are being achieved, and to evaluate and assess any contractor's performance. Additionally, qualitative ratings may be identified to provide a balance against quantitative metrics when assessing a contractor's performance.

1.1. Purpose

This document provides the DADS performance metrics. Metrics are used to assess the successfulness of DADS in general, and the performance of any contractor more specifically. For contract purposes, the metrics can be used to determine an award fee, justify the granting of an incentive, or justify the assessing of a penalty. Additionally, the metrics can be used to monitor the progress of contractual work, and facilitate oversight by the government.

1.2. Scope

The document identifies what needs to be measured to assess program and contractor performance, and provides tracing to program goals and objectives. The document does not include specific performance standards to be achieved, or any baseline values from which improvements can be measured.

1.3. DADS Goals and Objectives

Performance metrics are derived from the outcome-oriented goals and objectives that exist for the DADS Program. Table 1.3-1 introduces the program goals and objectives, while later Table 2-3 shows how the DADS performance metrics correlate to the goals and objectives.

Table 1.3-1, DADS Program Goals and Objectives

GOAL 1: Maximize the efficiency, timeliness and accuracy of the tabulation and dissemination products and services	
Obj 1.1	Meet all legal deadlines and external commitments
Obj 1.2	Contribute to the overall improvement of the quality and accuracy of the data and data products
Obj 1.3	Reduce the elapsed time required to produce releasable data and data products
Obj 1.4	Simplify and standardize the processes for tabulation and dissemination
Obj 1.5	Maintain continuity of tabulation and dissemination business operations in a changing environment
GOAL 2: Minimize the cost of tabulation and dissemination	
Obj 2.1	Implement process improvement initiatives to drive down the cost of tabulation and dissemination
Obj 2.2	Reduce costs through collaboration with other Census Bureau organizations that perform tabulation and dissemination
Obj 2.3	Leverage existing Census Bureau resources, processes and systems
GOAL 3: Increase user satisfaction with tabulation and dissemination products and services	
Obj 3.1	Ensure management and control of data privacy and confidentiality
Obj 3.2	Maintain high system availability
Obj 3.3	Increase user satisfaction with ability to find and acquire Census Bureau data and data products
Obj 3.4	Increase user satisfaction with the usefulness and relevance of Census Bureau data and data products
Obj 3.5	Develop new, more useful data products and services using existing Census Bureau data
Obj 3.6	Strengthen the effectiveness of secondary distributors of Census Bureau data and data products

2. –DADS Quantitative Performance Metrics

DADS quantitative performance metrics are provided in Table 2-2. The table includes both business performance metrics that relate directly to DADS tabulation and dissemination business operations, as well as technical performance metrics that have a supportive or enabling relationship to the business operations.

For each metric, the table includes additional information on the measurement technique to be used, along with a sample performance standard for achievement. While the sample performance standards are realistic values, they are only provided to aid in the overall understanding of the metric, and are not intended to record a specific program or contractual value.

One or more of the DADS performance metrics may be applicable to work being performed by a contractor. If so, the contractor and the Government will jointly define the specifics for each applicable metric, including performance standards, using the sample form shown in Figure 2-1

Figure 2-1, Sample Performance Metric Form

1. DADS Quantitative Performance Metric: PM 9-1		SAMPLE ONLY
2. Brief Description: Percent of time public system is available for use		
3. Performance Category: Availability		
4. Description: This metric will measure the core and non-core availability for each physical production system. Availability shall be the percentage of time the DADS system was available for use by the user community during the core hours of 8 AM to 8 PM (Eastern Time Zone), Monday through Friday.		
5. Who: Contractor shall measure & provide monthly reports.	6. Frequency: Downtime measured upon occurrence; reported monthly.	
7. How Measured: From the automatic detection of the unavailability (or from the creation of a problem ticket should automatic detection fail), including the outage that is specifically impacting the business process, until the resolution of the outage identified in the problem ticket.		
8. How Calculated: Availability for each infrastructure shall be calculated by subtracting the outage time for the month from the total scheduled available time for the month and dividing the result by the total scheduled available time for the month.		
9. Performance Standard: 99% per infrastructure for core hours, 95% for non-core hours		
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Table 2-2, DADS Quantitative Performance Metrics

DADS Quantitative Performance Metrics			Measurement Details	
	Business Performance Metrics		Measurement Technique	Sample Performance Standard
Quality of Product	PM 1-1	Number of cases of disclosure that are attributable to DADS	DADS reports to program sponsor all disclosure lapses. Program sponsor tracks cases.	0 cases
	PM 1-2	Percent of user feedback with privacy/confidentiality concerns	Feedback sent by web users; categorized by type such as navigation problem, data concern, etc.	1% or less
	PM 1-3	Number of errata cases that are attributable to DADS	DADS reports to program sponsor any tabulation/dissemination mistakes that cannot be corrected. Program sponsor tracks cases.	0 cases
	PM 1-4	Number of post-release corrections for accuracy issues that are attributable to DADS	Defects are opened with severity level of Urgent, High, Medium or Low. Defects are tracked by survey instance.	Large/complex release: 0 Urgent, 0 High, 3 or fewer Med, 5 or fewer Low. Small/simple release: 0 Urgent, 0 High, 0 Med, 3 or fewer Low.
	PM 1-5	Number of open defects for a release, at the time of public release, by severity level	Defects are opened with severity level of Urgent, High, etc. Defects are tracked by survey instance (for data releases) and by system release. Covers accuracy as well as usability issues.	0 Urgent, 0 High, 3 or fewer Medium, 5 or fewer Low.
	PM 1-6	Average results of post-release usability test	Test to measure users' ability to complete designated tasks; users' rating of system ease-of-use on 7-point scale. Conducted if a system release contains significant new functionality.	Task completion rate of 90 % or higher. Rating of 5 or higher.
Quality of Product & Process	PM 2-1	Results of government-conducted quality compliance audits	Audits will look for compliance with Census Bureau quality standards	Compliant.
	PM 2-2	Results of contractor-conducted quality compliance audits	Contractor to arrange for an independent Capability Maturity Model Integration assessment.	Compliant with CMMI Level 3 model.

DADS Quantitative Performance Metrics			Measurement Details	
	PM 2-3	Mean time to correction of post-release accuracy defects.	Elapsed time measured from reporting of problem until correction on public system. Only tracked for Urgent and High severity defects and change requests. Includes correction of data problems even if not caused by DADS.	10% improvement over baseline
Process Improvement	PM 3-1	Percent of processes replaced by consolidation or by automation	Manual count. As measured for a given survey instance, for a given fiscal year.	10% improvement over baseline
	PM 3-2	Percent elapsed time for data release saved by automation and/or consolidation of processes	For a given survey instance; for a given fiscal year.	10% improvement over baseline
	PM 3-3	Average elapsed time for data release, by product type	Elapsed time measured from receipt of specifications to release of product. Examples of product types: tabulated summary file; derived products for dissemination; reference maps, etc.	5% improvement over baseline
	PM 3-4	Percent of defects (all states) for a release by lifecycle phase in which error was found	Defect attribute includes life-cycle phase when found, such as construction, system test, user acceptance test, production. Defects tracked by survey instance (for data releases) and by system release.	20% or less for system test; 10% or less for UAT; 5% or less for dissemination production, 0% if tabulation production
	PM 3-5	Percent of defects (all states) for a release by lifecycle phase in which error was introduced	Defect attribute includes the life-cycle phase when introduced, such as analysis, design, construction, test, production. Defects tracked by survey instance (for data release) and by system release.	5% or less each for analysis, design, and test. 5% or less for dissemination production, 0% if tabulation production
	PM 3-6	Percent of enhancements planned for a system release and deferred to a subsequent system release	Enhancements assigned to a system release, at planning stage and at completion.	0%
Schedule Mgt	PM 4-1	Hit/miss outcome for Census 2010 Public Law 94-171 data release legal deadline	Tabulation and dissemination of data for all states complete by April 1, 2011	100% hit rate
	PM 4-2	Hit/miss outcome for 2007 Economic Census release dates committed to Bureau of Economic Analysis	Dissemination occurs within 48 hours of data provider delivering approved data.	95% or better hit rate

DADS Quantitative Performance Metrics			Measurement Details	
	PM 4-3	Hit/miss outcome for typical release milestone due dates	Establish and track milestones in Master Project Plan. Milestone examples: tabulated data to client; data for dissemination on Internal Review system.	100% hit rate
	PM 4-4	Ratio of budgeted cost of work performed to budgeted cost of work scheduled	Schedule Performance Index from monthly Earned Value Report	SPI of 1.0
Cost Mgt	PM 5-1	Percent of costs reduced by automation and/or consolidation of processes	Effort-hours saved, converted to dollars. Measured for a given survey instance, for a given fiscal year.	5% improvement over baseline
	PM 5-2	Average production costs across all processes, by product type	Effort-hours expended, converted to dollars.	2% improvement over baseline
	PM 5-3	Ratio of full-time-equivalents to operating costs	Measure actual costs for labor and for operations.	2% improvement over baseline
	PM 5-4	Overall Census Bureau cost savings per collaborative initiative	Estimate of costs without collaboration; actual costs with collaboration. Government responsible for acquiring figures external to DADS.	20% improvement over estimate
	PM 5-5	Ratio of budgeted cost of work performed to actual cost of work performed	Cost Performance Index from monthly Earned Value Report	CPI of 1.0
Resource Mgt	PM 6-1	Cost savings accrued via re-use during re-engineering efforts	Estimated cost without re-use; actual cost with re-use. By re-use categories of: application, hardware, data/metadata, process.	x% of annual budget. (Expect to vary by fiscal year.)
User Satisfaction	PM 7-1	Percent of user feedback commenting negatively on navigation	Feedback sent by web users; categorized by type such as navigation problem, data concern, etc.	5% improvement over baseline
	PM 7-2	Results from survey of web site visitors, for questions on satisfaction with navigation / interface	Existing survey, conducted by Census Bureau's Marketing Services Office.	5% improvement over baseline
	PM 7-3	Percent of user feedback commenting negatively on product usefulness/relevance	Feedback sent by web users; categorized by type such as navigation problem, data concern, etc.	5% improvement over baseline
	PM 7-4	Results from survey of web site visitors, for questions on satisfaction with usefulness/relevance	Existing survey, conducted by Census Bureau's Marketing Services Office.	5% improvement over baseline

DADS Quantitative Performance Metrics			Measurement Details	
	PM 7-5	Results from survey of secondary distributors, focusing on satisfaction	Existing survey, conducted by University of Michigan: American Customer Satisfaction Index	5% improvement over baseline
	PM 7-6	Percent of enhancements with focus on improved navigation	Count of enhancements by category	x% for fiscal year. (Expect to vary by fiscal year.)
	PM 7-7	Percent of enhancements with product usefulness/relevance focus	Count of enhancements by category	x% for fiscal year. (Expect to vary by fiscal year.)
	PM 7-8	Percent of enhancements targeted to needs/desires of secondary distributors	Count of enhancements by category	x% for fiscal year. (Expect to vary by fiscal year.)
	PM 7-9	Number of new products/services introduced using existing DADS data	Count of new products/services requiring no additional inputs from data providers	No specific target. Monitor for evaluation; compliance with Census Bureau strategies.
Usage Statistics	PM 8-1	Number of user visits	Automated count of visits to public web sites, reported monthly.	Variable target, depending upon seasonal factors and data freshness. Monitor for evaluation.
	PM 8-2	Number of user requests by product / request categories	Automated logging of user requests by categories such as by dataset, by geographic type, by table or map result, etc.	Variable target, depending upon seasonal factors and data freshness. Monitor for evaluation.
	PM 8-3	Average size of downloaded data, by product	Automated logging of user downloads, by product	Variable target, depending upon seasonal factors and data freshness. Monitor for evaluation.
	Technical Performance Metrics		Measurement Technique	Sample Performance Standard
Availability	PM 9-1	Percent of time public system is available for use	Time up during core hours, 8AM to 8PM, Monday to Friday, and during non-core hours.	99% for core hours, 95% for non-core hours
	PM 9-2	Percent of time internal system is unavailable for use	Time down during business hours, 8AM to 5PM, Monday to Friday. Tracked by scheduled downtime and unscheduled downtime.	9% or less scheduled, 1% or less unscheduled

DADS Quantitative Performance Metrics			Measurement Details	
Capacity	PM 9-3	Percent utilization across infrastructure (disk use, memory, etc.)	Load testing simulating peak use conditions.	At most, 80% utilization.
Reliability	PM 9-4	Mean time to failure	Average time between failures of the system. Tracked per publicly available system.	Maintain baseline
	PM 9-5	Percent of system requests that failed to complete	System logs when web user receives “busy page” or error page instead of expected page result.	2% of page results, or less.
Response	PM 9-6	Average system response time for a selection of typical tasks	Response time in seconds during heavy user load and during light user load. Typical tasks include: selection tasks, data returned in table, data returned in map, etc.	Maintain baseline
Security	PM 9-7	Results of system intrusion tests	Tests conducted and results tracked by Census Bureau’s Information Technology Security Office	0 intrusions

Table 2-2, DADS Quantitative Performance Metrics

Table 2-3, Quantitative Performance Metrics Mapped to Program Goals and Objectives

Goal/Objective	DADS Performance Metric	
GOAL 1: Maximize the efficiency, timeliness and accuracy of the tabulation and dissemination products and services		
Obj 1.1 Meet all legal deadlines and external commitments	PM 4-1	Hit/miss outcome for Census 2010 Public Law 94-171 data release legal deadline
	PM 4-2	Hit/miss outcome for 2007 Economic Census release dates committed to Bureau of Economic Analysis
Obj 1.2 Contribute to the overall improvement of the quality and accuracy of the data and data products	PM 1-3	Number of errata cases that are attributable to DADS
	PM 1-4	Number of post-release corrections for accuracy issues that are attributable to DADS
	PM 1-5	Number of open defects for a release, at the time of public release, by severity level
	PM 2-1	Results of government-conducted quality compliance audits
	PM 2-2	Results of contractor-conducted quality compliance audits
	PM 2-3	Mean time to correction of post-release accuracy defects.
	PM 3-4	Percent of defects (all states) for a release by lifecycle phase in which error was found
	PM 3-5	Percent of defects (all states) for a release by lifecycle phase in which error was introduced
	PM 3-6	Percent of enhancements planned for a system release and deferred to a subsequent system release
Obj 1.3 Reduce the elapsed time required to produce releasable data and data products	PM 3-2	Percent elapsed time for data release saved by automation and/or consolidation of processes
	PM 3-3	Average elapsed time for data release, by product type
Obj 1.4 Simplify and standardize the processes for tabulation and dissemination	PM 3-1	Percent of processes replaced by consolidation or by automation
Obj 1.5 Maintain continuity of tabulation and dissemination business operations in a changing environment	PM 4-1	Hit/miss outcome for Census 2010 Public Law 94-171 data release legal deadline
	PM 4-3	Hit/miss outcome for typical release milestone due dates
	PM 4-4	Ratio of budgeted cost of work performed to budgeted cost of work scheduled
	PM 9-1	Percent of time public system is available for use
	PM 9-2	Percent of time internal system is unavailable for use
	PM 9-3	Percent utilization across infrastructure (disk use, memory, etc.)
	PM 9-4	Mean time to failure
	PM 9-5	Percent of requests that failed to complete
	PM 9-6	Average system response time for a selection of typical tasks
PM 9-7	Results of system intrusion tests	
GOAL 2: Minimize the cost of tabulation and dissemination		
Obj 2.1 Implement process improvement initiatives to drive down the cost of	PM 5-1	Percent of costs reduced by automation and/or consolidation of processes
	PM 5-2	Average production costs across all processes, by product type
	PM 5-3	Ratio of full-time-equivalents to operating costs

Goal/Objective	DADS Performance Metric	
tabulation and dissemination	PM 5-5	Ratio of budgeted cost of work performed to actual cost of work performed
Obj 2.2 Reduce cost through collaboration with other Census Bureau organizations that perform tabulation and dissemination	PM 5-4	Overall Census Bureau cost savings per collaborative initiative
Obj 2.3 Leverage existing Census Bureau resources, processes and systems	PM 6-1	Cost savings accrued via re-use during re-engineering efforts
GOAL 3: Increase user satisfaction with tabulation and dissemination products and services		
Obj 3.1 Ensure management and control of data privacy and confidentiality	PM 1-1	Number of cases of disclosure that are attributable to DADS
	PM 1-2	Percent of user feedback with privacy/confidentiality concerns
Obj 3.2 Maintain high system availability	PM 8-1	Number of user visits
	PM 8-2	Number of user requests by product / request categories
	PM 8-3	Average size of downloaded data, by product
	PM 9-1	Percent of time public system is available for use
	PM 9-2	Percent of time internal system is unavailable for use
	PM 9-3	Percent utilization across infrastructure (disk use, memory, etc.)
	PM 9-4	Mean time to failure
	PM 9-5	Percent of requests that failed to complete
	PM 9-6	Average system response time for a selection of typical tasks
Obj 3.3 Increase user satisfaction with ability to find and acquire Census Bureau data and data products	PM 9-7	Results of system intrusion tests
	PM 1-6	Average results of post-release usability test
	PM 7-1	Percent of user feedback commenting negatively on navigation
	PM 7-2	Results from survey of web site visitors, for questions on satisfaction with navigation / interface
Obj 3.4 Increase user satisfaction with the usefulness and relevance of Census Bureau data and data products	PM 7-6	Percent of enhancements with focus on improved navigation
	PM 7-3	Percent of user feedback commenting negatively on product usefulness/relevance
	PM 7-4	Results from survey of web site visitors, for questions on satisfaction with usefulness/relevance
Obj 3.5 Develop new, more useful data products and services using existing Census Bureau data	PM 7-7	Percent of enhancements with product usefulness/relevance focus
	PM 7-9	Number of new products/services introduced using existing DADS data
Obj 3.6 Strengthen the	PM 7-5	Results from survey of secondary distributors, focusing on satisfaction

Goal/Objective	DADS Performance Metric	
effectiveness of secondary distributors of Census Bureau data and data products	PM 7-8	Percent of enhancements targeted to needs/desires of secondary distributors

Table 2-3, Quantitative Performance Metrics Mapped to Program Goals and Objectives**3. Qualitative Performance Ratings**

In assessing contractor performance, DADS includes qualitative performance ratings to provide a balance against the previously identified quantitative performance metrics. Table 3-1 provides typical qualitative categories tracked by DADS, with assessment results shared with the contractor on a regular basis. The government recognizes the subjective nature of these ratings, and therefore they may play a smaller role than the quantitative metrics in determining award fees or conducting contract surveillance.

Table 3-1, DADS Qualitative Performance Rating Categories

QPR-1 Responsiveness to Government (RG)
Maintenance of effective communication with the Government including a demonstration of an understanding of project and related business issues and opportunities. Cooperation of the Contractor with the Government in terms of responsiveness to information requests and attention to urgent needs and proactive problem resolution.
QPR-2 Project and Cost Management (PCM)
Management of cost and schedule performance to the contract baseline and the reporting of progress results per the cost and schedule status report requirements. Execution of risk mitigation plans and overall effectiveness in avoiding problems. Timely assignment of qualified and effective staff. Complements quantitative performance categories of: <ul style="list-style-type: none"> Schedule Management Cost Management
QPR-3 Process and Quality (PQ)
Implementation of revision control measures that provide unambiguous definition of all program baseline documentation, improvement tools, process and procedures, and data products. Execution of configuration management processes that track changes to the technical, cost and schedule baselines. Effectiveness of the quality assurance process. Complements quantitative performance categories of: <ul style="list-style-type: none"> Quality of Product Quality of Process User Satisfaction
QPR-4 Improvement and Innovation (II)
Effectiveness of continuous improvement activities to achieve forecasted improvement(s) in quality and productivity. Forward looking strategic planning as well as the identification and implementation of opportunities that leverage new technologies, improved processes and/or cost sharing opportunities through a cooperative environment to achieve program goals and/or reduced costs. Complements quantitative performance categories of: <ul style="list-style-type: none"> Process Improvement Resource Management